

CPC**COOPERATIVE PATENT CLASSIFICATION****F16N****LUBRICATING****NOTE**

Attention is drawn to the following places:

[A01D 69/12](#) Lubrication of harvesters;
[B21J 3/00](#) Lubricating during forging or pressing;
[B25D 17/26](#) Lubricating of portable power-driven percussive tools;
[B60R 17/00](#) Arrangements or adaptations of lubricating; systems or devices in vehicles;
[B61C 17/08](#) Lubrication systems for railway locomotives;
[B62D 55/092](#) Vehicle endless-track units with lubrication means;
[D04B 35/28](#) Devices for lubricating knitting machine parts;
[E05B 17/08](#) Lubricating devices for locks;
[E05D 11/02](#) Lubricating arrangements for hinges;
[E21B 10/22](#) Lubricating details of roller drill bits for earth; drilling.

Guide heading:

Lubrication devices or arrangements for oil or grease

F16N 1/00

Constructional modifications of parts of machines or apparatus for the purpose of lubrication

F16N 3/00

Devices for supplying lubricant by manual action ([draining equipment for liquid containers B65D](#))

F16N 3/02

. delivering oil

F16N 3/04

.. Oil cans
 Oil syringes

F16N 3/06

... delivering on squeezing

F16N 3/08

... incorporating a piston-pump

F16N 3/10

. delivering grease

F16N 3/12

.. Grease guns

F16N 5/00

Apparatus with hand-positioned nozzle supplied with lubricant under pressure ([F16N 3/00](#) takes precedence)

F16N 5/02

. Nozzles or nozzle-valve arrangements therefor, e.g. high-pressure grease guns

F16N 7/00

Arrangements for supplying oil or unspecified lubricant from a stationary reservoir or the equivalent in or on the machine or member to be lubricated ([axle-box lubrication for railway rolling-stock B61F 17/00](#))

- F16N 7/02 . with gravity feed or drip lubrication
- F16N 7/04 . . with oil flow promoted by vibration
- F16N 7/06 . . Arrangements in which the droplets are visible
- F16N 7/08 . . controlled by means of the temperature of the member to be lubricated
(thermostats [G05D](#))
- F16N 7/10 . . incorporating manually-operated regulating means, e.g. spindles
- F16N 7/12 . with feed by capillary action, e.g. by wicks
- F16N 7/14 . the lubricant being conveyed from the reservoir by mechanical means (by pumping devices [F16N 7/36](#), [F16N 7/38](#); adaptations for lubrication of machines or engines in general, of internal-combustion engines [F01M](#))
- F16N 7/16 . . the oil being carried up by a lifting device (scoop devices in general [F04D](#))
- F16N 7/18 . . . with one or more feed members fixed on a shaft
- F16N 7/20 . . . with one or more members moving around the shaft to be lubricated
- F16N 7/22 shaped as rings
- F16N 7/24 . . . with discs, rollers, belts or the like contacting the shaft to be lubricated
- F16N 7/26 . . Splash lubrication (mist lubrication [F16N 7/32](#))
- F16N 7/28 . . Dip lubrication
- F16N 7/30 . the oil being fed or carried along by another fluid (in internal- combustion engines [F02F](#))
- F16N 7/32 . . Mist lubrication (splash lubrication [F16N 7/26](#))
- F16N 7/34 . . . Atomising devices for oil (atomising devices in general [B05B](#))
- F16N 7/36 . with feed by pumping action of the member to be lubricated or of a shaft of the machine
Centrifugal lubrication
- F16N 7/363 . . { Centrifugal lubrication }
- F16N 7/366 . . {with feed by pumping action of a vertical shaft of the machine }
- F16N 7/38 . with a separate pump
Central lubrication systems
- F16N 7/385 . . {Central lubrication systems }
- F16N 7/40 . . in a closed circulation system
- F16N 9/00** **Arrangements for supplying oil or unspecified lubricant from a moving reservoir or the equivalent** (also usable with a stationary reservoir [F16N 7/00](#))
- F16N 9/02 . with reservoir on or in a rotary member
- F16N 9/04 . with reservoir on or in a reciprocating, rocking, or swinging member
- F16N 11/00** **Arrangements for supplying grease from a stationary reservoir or the equivalent in or on the machine or member to be lubricated**
Grease cups

- F16N 11/02 . Hand-actuated grease cups, e.g. Stauffer cups
- F16N 11/04 . Spring-loaded devices
- F16N 11/06 . Weight-loaded devices
- F16N 11/08 . with mechanical drive, other than directly by springs or weights ([lubricating-pumps F16N 13/00](#))
- F16N 11/10 . by pressure of another fluid
- F16N 11/12 . by centrifugal action

- F16N 13/00** **Lubricating-pumps** (oil cans with pump [F16N 3/08](#); pumps for liquids in general [F04](#))
 - F16N 13/02 . with reciprocating piston ([pumps with distributing equipment F16N 13/22](#))
 - F16N 13/04 . . Adjustable reciprocating pumps
 - F16N 13/06 . . Actuation of lubricating-pumps
 - F16N 13/08 . . . by hand {or foot }
 - F16N 13/10 . . . with mechanical drive ([F16N 13/18](#) takes precedence)
 - F16N 13/12 with ratchet
 - F16N 13/14 with cam or wobble-plate on shaft parallel to the pump cylinder or cylinders
 - F16N 13/16 . . . with fluid drive
 - F16N 13/18 . . . relative movement of pump parts being produced by inertia of one of the parts or of a driving member

 - F16N 13/20 . Rotary pumps ([with distributing equipment F16N 13/22](#))

 - F16N 13/22 . with distributing equipment ([separate distributing equipment F16N 25/00](#))

- F16N 15/00** **Lubrication with substances other than oil or grease**
Lubrication characterised by the use of particular lubricants in particular apparatus or conditions ([F16N 17/00](#) takes precedence; lubricating compositions, selection of particular substances as lubricants in general [C10M](#) ; bearings with surfaces incorporating lubricant [F16C 33/04](#); lubrication specially adapted to machines or apparatus provided for in a single other class, see the relevant class for the machine or apparatus)
 - F16N 15/02 . with graphite or graphite-containing compositions
 - F16N 15/04 . with water ([bearings working in water F16C](#))

- F16N 17/00** **Lubrication of machines or apparatus working under extreme conditions** (additives to lubricating oil or lubricating grease [C10M](#))
 - F16N 17/02 . at high temperature (of turbines [F01D](#) , [F02C](#) ; lubrication of machines or engines in general, of internal-combustion engines [F01M](#))

F16N 17/04	<ul style="list-style-type: none"> at low temperature (lubrication of refrigerating machines F25B)
F16N 17/06	<ul style="list-style-type: none"> in vacuum or under reduced pressure (lubrication of evacuating pumps F04 ; of rotary anodes of X-ray tubes H01J 35/10)
Guide heading:	Details of lubricators or lubrication systems
F16N 19/00	Lubricant containers for use in lubricators or lubrication systems
F16N 19/003	<ul style="list-style-type: none"> { Indicating oil level (measuring liquid level in general G01F) }
F16N 19/006	<ul style="list-style-type: none"> {Maintaining oil level (level control in general G05D 9/00) }
F16N 21/00	Conduits Junctions (in general F16L) Fittings for lubrication apertures
F16N 21/02	<ul style="list-style-type: none"> Lubricating nipples
F16N 21/04	<ul style="list-style-type: none"> Nozzles for connection of lubricating equipment to nipples
F16N 21/06	<ul style="list-style-type: none"> Covering members for nipples, conduits or apertures
F16N 23/00	Special adaptations of check valves (check valves in general F16K)
F16N 25/00	Distributing equipment {with or without proportioning devices }
F16N 25/02	<ul style="list-style-type: none"> with reciprocating distributing slide valve
F16N 25/04	<ul style="list-style-type: none"> with rotary distributing member (combined with oil pump F16N 13/22)
F16N 27/00	Proportioning devices (liquid meters G01F)
F16N 27/005	<ul style="list-style-type: none"> {using restrictions }
F16N 27/02	<ul style="list-style-type: none"> Gating equipment (multiple-way valves F16K ; metering cocks G01F)
F16N 29/00	Special means in lubricating arrangements or systems providing for the indication or detection of undesired conditions Use of devices responsive to conditions in lubricating arrangements or systems (in bearings F16C ; constructions of apparatus outside the lubricating arrangements or systems, see the relevant classes)
F16N 29/02	<ul style="list-style-type: none"> for influencing the supply of lubricant
F16N 29/04	<ul style="list-style-type: none"> enabling a warning to be given enabling moving parts to be stopped

F16N 31/00	Means for collecting, retaining, or draining-off lubricant in or on machines or apparatus (oil separators for separating oil from exhaust steam F22G)
F16N 31/002	. {Drain pans }
F16N 31/004	. . {combined with container }
F16N 31/006	. {Drip trays }
F16N 31/02	. Oil catchers Oil wipers (oil-scraping rings for pistons F16J 9/20 ; { cleaning means for indicating or measuring dip members, e.g. dipstick wipers G01F 23/045 })
F16N 33/00	Mechanical arrangements for cleaning lubricating equipment Special racks or the like for use in draining lubricant from machine parts
Guide heading:	Care of lubricants
F16N 35/00	Storage of lubricants in engine-rooms or the like (storage containers B65)
F16N 37/00	Equipment for transferring lubricant from one container to another
F16N 37/003	. {for filling bearings }
F16N 37/02	. for filling grease guns
F16N 39/00	Arrangements for conditioning of lubricants in the lubricating system (cleaning of lubricating oil, lubricating compositions C10M)
F16N 39/002	. {by deaeration (degasification of liquids B01D 19/00) }
F16N 39/005	. {by evaporating or purifying (for heating or cooling of filters B01D 35/18 , e.g. comprising a vaporising unit B01D 35/185) }
F16N 39/02	. by cooling (heat-exchangers in general F28)
F16N 39/04	. by heating (heat-exchangers in general F28)
F16N 39/06	. by filtration (filters in general B01D ; magnetic separators B03C 1/00 ; {centrifugal separators or filters B04B 5/005 })
F16N 39/08	. by diluting, e.g. by addition of fuel (lubrication of machines or engines in general, of internal-combustion engines F01M)
F16N 99/00	Subject matter not provided for in other groups of this subclass

Guide heading:

F16N 2013/00	Lubricating-pumps (oil cans with pump F16N 3/08 ; pumps for liquids in general F04)
F16N 2013/003	. Flexible-wall pumps
F16N 2013/006	. Jet pumps
F16N 2013/02	. with reciprocating piston (pumps with distributing equipment F16N 13/22)
F16N 2013/06	. . Actuation of lubricating-pumps
F16N 2013/063	. . . with electrical drive
F16N 2013/066	. . . with electromagnetical drive
F16N 2013/20	. Rotary pumps (with distributing equipment F16N 13/22)
F16N 2013/205	. . Screw pumps
F16N 2021/00	Conduits Junctions (in general F16L) Fittings for lubrication apertures
F16N 2021/005	. Modulair units
F16N 2031/00	Means for collecting, retaining, or draining-off lubricant in or on machines or apparatus (oil separators for separating oil from exhaust steam F22G)
F16N 2031/008	. Drain plugs
F16N 2031/02	. Oil catchers Oil wipers (oil-scraping rings for pistons F16J 9/20 ; { cleaning means for indicating or measuring dip members, e.g. dipstick wipers G01F 23/045 })
F16N 2031/025	. . Oil-slinger
F16N 2033/00	Mechanical arrangements for cleaning lubricating equipment Special racks or the like for use in draining lubricant from machine parts
F16N 2033/005	. Flushing
F16N 2037/00	Equipment for transferring lubricant from one container to another
F16N 2037/006	. Filling
F16N 2039/00	Arrangements for conditioning of lubricants in the lubricating system (cleaning of lubricating oil, lubricating compositions C10M)
F16N 2039/007	. Using strainers
F16N 2039/06	. by filtration (filters in general B01D ; magnetic separators B03C 1/00 ; {centrifugal separators or filters B04B 5/005 })

F16N 2039/065 . . inlet foot filter

Guide heading:

F16N 2200/00 Condition of lubricant

- F16N 2200/02 . Oxidation
- F16N 2200/04 . Detecting debris, chips, swarfs
- F16N 2200/06 . Film thickness
- F16N 2200/08 . Acidity, pH-value
- F16N 2200/10 . Temperature
- F16N 2200/12 . Viscosity
- F16N 2200/14 . Treating with electricity
- F16N 2200/16 . using tracers
- F16N 2200/18 . Detecting foaming
- F16N 2200/20 . Detecting water

Guide heading: Care of lubricants

F16N 2210/00 Applications

- F16N 2210/02 . Turbines
- F16N 2210/025 . . Wind Turbines
- F16N 2210/04 . Vehicles
- F16N 2210/06 . Marine
- F16N 2210/08 . Aircraft
- F16N 2210/09 . . for inverted flight
- F16N 2210/10 . Refrigerators
- F16N 2210/12 . Gearings
- F16N 2210/14 . Bearings
- F16N 2210/16 . Pumps

- F16N 2210/18 . Electric motors
- F16N 2210/20 . Electric generators
- F16N 2210/22 . Centrifuges
- F16N 2210/24 . Conveyers
- F16N 2210/26 . Spinning spindles
- F16N 2210/28 . submerged
- F16N 2210/30 . for reversed rotation
- F16N 2210/32 . Sewing machines
- F16N 2210/33 . Chains
- F16N 2210/34 . Cables and wires

F16N 2230/00 Signal processing

- F16N 2230/02 . Microprocessor
Microcomputer
- F16N 2230/06 . using mapping techniques
- F16N 2230/10 . Timing network
- F16N 2230/12 . . . with pneumatic elements
- F16N 2230/13 . . . with hydraulic elements
- F16N 2230/14 . . . with bimetallic elements
- F16N 2230/16 . . . with capacitors
- F16N 2230/18 . Switches
- F16N 2230/19 . . Photo sensor
- F16N 2230/20 . . Reed relays
- F16N 2230/22 . using counters

F16N 2250/00 Measuring

- F16N 2250/04 . Pressure
- F16N 2250/05 . . Atmospheric pressure
- F16N 2250/06 . . for determining flow
- F16N 2250/08 . Temperature
- F16N 2250/11 . . Ambient temperature

F16N 2250/16	. Number of revolutions, RPM
F16N 2250/18	. Level
F16N 2250/30	. Dielectricum
F16N 2250/32	. Inductive
F16N 2250/34	. Transparency Light Photo sensor
F16N 2250/36	. Viscosity
F16N 2250/38	. Piezo x-tal
F16N 2250/40	. Flow
F16N 2250/42	. Friction
F16N 2250/50	. Sampling
F16N 2250/52	.. magnetic
F16N 2260/00	Fail safe
F16N 2260/02	. Indicating
F16N 2260/04	.. Oil level
F16N 2260/05	.. Oil flow
F16N 2260/06	.. Temperature
F16N 2260/065	... by means of colours or dye
F16N 2260/08	.. Pressure
F16N 2260/12	.. using warning lamps
F16N 2260/14	.. using sound
F16N 2260/16	.. using recording
F16N 2260/18	.. necessity of changing oil
F16N 2260/20	. Emergency
F16N 2260/21	.. limping home
F16N 2260/22	.. Rupture
F16N 2260/24	.. using accumulator
F16N 2260/30	. Clogging filter
F16N 2260/32	. Pump failure
F16N 2260/40	. Pre-lubrication

F16N 2260/50 . After-lubrication

F16N 2260/60 . Limping home

F16N 2270/00 Controlling

F16N 2270/10 . Level

F16N 2270/12 .. using overflow ([F16N 2270/18](#) takes precedence)

F16N 2270/14 .. using float device

F16N 2270/18 .. using overflow by filling

F16N 2270/20 . Amount of lubricant

F16N 2270/22 .. with restrictions

F16N 2270/24 ... using porous, felt, ceramic, or sintered material

F16N 2270/26 ... variable

F16N 2270/30 .. intermittent

F16N 2270/32 ... Fixed pulse, fixed length, fixed amplitude

F16N 2270/48 ... pressure-controlled

F16N 2270/50 . Condition

F16N 2270/52 .. Viscosity

F16N 2270/54 .. pH
Acidity

F16N 2270/56 .. Temperature

F16N 2270/60 . Pressure

F16N 2270/62 .. Limit

F16N 2270/64 .. Set-pressure

F16N 2270/70 . Supply

F16N 2270/72 .. on-off

F16N 2270/74 ... only during use

F16N 2280/00 Valves

F16N 2280/02 . electromagnetically operated

F16N 2280/04 . Variable-flow or proportional valves